

1 **III. AMENDMENT TO THE CLAIMS**

2 1. (Currently amended) A quad cycle comprising the following:

3 a. a frame means, the frame means receiving bearing means which receives a rear
4 axle (192); the rear axle (192) rotatably receiving a plurality of rear wheels (195);

5 b. the frame means fixedly receiving a steering unit (800) distal to the rear axle
6 (192); a right axle (835) and a left axle (875) rotatably affixed by steerable means to the
7 steering unit (800); the right axle (835) and the left axle (875) rotatably receiving at least
8 one front wheel (175) respectively;

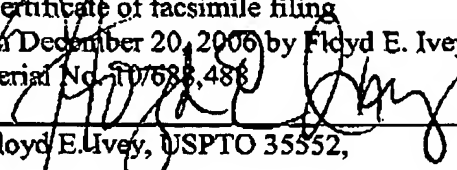
9 c. a bicycle derail (700) assembly is mounted by derail mounting means (711)
10 at the frame means and at the rear axle (192); the derail (700) assembly having a drive
11 cam (730); a brake assembly (600) mounted by brake mounting means at the frame means
12 to exert braking forces at a brake rotor (640) at the rear axle (192);

13 d. the frame means rotatably receiving an upright swing arm assembly (400); said swing
14 arm assembly in lever and rotation communication with the drive cam (730); the upright
15 swing arm assembly (400) in steering cable communication with the steering unit (800),
16 the right axle (835) and the left axle (875)[.];

17
18 e. the frame means comprising a main frame (100) having at least one elongated center
19 leg (140) having a center leg first end (144) and a center leg second end (148);

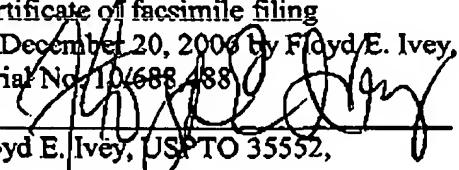
20 a front "T" frame (160), generally tubular and elongated, is affixed by frame affixing
21 means at the center leg first end (144); the front "T" frame (160) is comprised of a frame
22 member generally orthogonal to the at least one center leg (140);

23 a rear "T" frame (180), generally elongated and affixed by frame affixing means at the
24 center leg second end (148); the rear "T" frame (180) is composed of a frame member
25 generally orthogonal to the at least one center leg first end (144);

26
27 Certificate of facsimile filing
28 on December 20, 2006 by Floyd E. Ivey,
Serial No. 10/688,488

Floyd E. Ivey, USPTO 35552,

Application No. 10/688,488

1 f. steering and propulsion means provided in association with a center vertical frame
2 means (260) or seen as the center vertical leg (260), swing arms (400) and foot pads
3 (500); frame means is generally formed from tubular materials including a variety of
4 cross sections of metal or composite materials; the center vertical leg (260) is upstanding
5 and has an upper vertical leg section (280) and a lower vertical leg section (290) having a
6 lower leg first end (291); vertical leg bracket means (293) affixed by immovable means at
7 the lower leg first end (291) and oriented to receive the frame center leg (140)
8 intermediate the center leg first end (144) and the derailer mounting means (711); the
9 center vertical leg (260) is moveably or immovably affixed at the frame center leg (140);
10
11 g. the upright swing arm assembly (400) comprised of a left swing arm (410) and a right
12 swing arm (430); an elongated rigid swing arm mount (450), generally comprised of
13 cylindrical metal or composite tube or rod means interrelates the left swing arm (410), the
14 center vertical leg (260) and the right swing arm (430); vertical leg swing arm apertures
15 (285) proximal and the vertical leg second end (287), are in alignment with left middle
16 swing arm apertures (417) and right middle swing arm apertures (437); said apertures are
17 sized to receive and do receive the swing arm mount (450); the swing arm mount (450)
18 has a left end (455) and a right end (460) and is orthogonal to the frame center leg (140);
19 the left middle swing arm section (420) is received at the swing arm mount (450) left end
20 (455) and is rotatably affixed, by rotatable means, proximal the left end (455); the right
21 middle swing arm section (440) is received at the swing arm mount (450) right end (440)
22 and is rotatably affixed, by rotatable means, proximal the right end (460);
23 the left swing arm (410) has a left lower swing arm lower end (428); the right swing arm
24 (430) has a right lower swing arm lower end (448);

27 Certificate of facsimile filing
28 on December 20, 2006 by Floyd E. Ivey,
Serial No. 10/688,488

Floyd E. Ivey, USPTO 35552,

Application No. 10/688,488

1 h. foot pads (500) comprise an elongated substantially planar left foot pad (510) and right
2 foot pad (540); the left foot pad (510) having a left foot pad first end (515), a left foot pad
3 second end (520) and a left foot pad center (525); the right foot pad (540) having a right
4 foot pad first end (545), a right foot pad second end (550) and a right foot pad center
5 (555); bushing and shaft receiving means at the left lower swing arm lower end (428) and
6 at the right lower swing arm lower end (448) align with and rotatably receive bushing and
7 shaft receiving means at the left foot pad first end (515) and right foot pad first end (545)
8 respectively for a rotatable interaction; arm lever action and foot action at the left swing
9 arm (410) and right swing arm (430) and at the left foot pad (510) and right foot pad
10 (540) exert forces against the drive cam (730) and derail gear assembly (705) to propel
11 the quad cycle (1);

12
13 I. the tubular left swing arm (410) is comprised of a left middle swing arm section (420)
14 intermediate a left lower swing arm section (425) and a left upper swing arm section
15 (415) having a left upper swing arm lower end (418);
16 the tubular right swing arm (430) is comprised of a right middle swing arm section (440)
17 intermediate a right lower swing arm section (445) and a right upper swing arm section
18 (435) having a right upper swing arm lower end (438);

19
20 i. a left master hub (470) immovably affixed by hub affixing means at the left upper
21 swing arm lower end (418); the left middle swing arm section (420) has a left middle
22 swing arm upper end (421); a left master hub bracket means (471) is immovably affixed
23 by bracket affixing means at the left middle swing arm upper end (421); the left master
24 hub (470) is received by the left master hub bracket means (471) and is pivotally affixed
25 relative to the left master hub bracket means (471);

26
27 Certificate of facsimile filing
28 on December 20, 2006 by Floyd E. Ivey,
Serial No. 10/688,488

Application No. 10/688,488

Floyd E. Ivey, USPTO 34562

6

Z:\PCClient\KruLSteve and Walter\Patent\Responses\Response.OA.060620DRAFT.wpd

1 k. a right master hub (480) immovably affixed by hub affixing means at the right upper
2 swing arm lower end (438); the right middle swing arm section (440) has a right middle
3 swing arm upper end (441); a right master hub bracket means (481) is immovably affixed
4 by bracket affixing means at the right middle swing arm upper end (441); the right master
5 hub (480) is received by the right master hub bracket means (481) and is pivotally affixed
6 relative to the right master hub bracket means (481);

7
8 l. the left master hub (470) is generally disk shaped having a left master hub groove (476)
9 at a left master hub perimeter (478) where the left master hub groove (476) is principally
10 "V" or "U" shaped to receive cable means for steering control (1000) comprising a first
11 left side steering cable (1100) and a first right side steering cable (1200); the said first left
12 side steering cable (1100) fixedly terminated at the left master hub (470) at the left master
13 hub groove (476) by a nonadjustable cable fixing means (477) which anchors the
14 indicated cable by screw, bolt, welding or other immovable fixing means; the said first
15 right side steering cable (1200) fixedly terminated at the left master hub (470) at the left
16 master hub groove (476) by a nonadjustable cable fixing means (477) which
17 nonadjustable cable fixing means or anchors comprising screw, bolt, welding or other
18 immovable fixing means;

19
20 m. the right master hub (480) is generally disk shaped having a right master hub groove
21 (486) at a right master hub perimeter (488) where the right master hub groove (486) is
22 principally "V" or "U" shaped to receive a second right side steering cable (1300) and a
23 second left side steering cable (1400); the said second right side steering cable (1300)
24 fixedly terminated at the right master hub (480) at the right master hub groove (486) by a
25 nonadjustable cable fixing means (487) which anchors the indicated cable by screw, bolt,

26
27 Certificate of facsimile filing
28 on December 20, 2006 by Floyd E. Ivey,
Serial No. 10/688,488
Floyd E. Ivey, USPTO 35532,

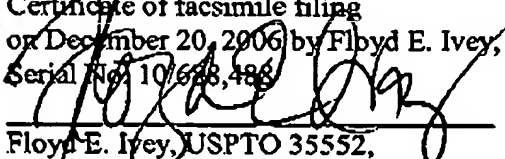
Application No. 10/688,488

1 welding or other immovable fixing means; the said second left side steering cable (1400)
2 fixedly terminated at the right master hub (480) at the right master hub groove (486) by a
3 nonadjustable cable fixing means (487) which anchors the indicated cable by screw, bolt,
4 welding or other immovable fixing means;

5
6 n. the tubular left swing arm (410) and the tubular right swing arm (430) rotate about the
7 swing arm mount (450); the left swing arm (410) and the right swing arm (430) cycle
8 toward the front "T" frame (160), then away from the front "T" frame (160) toward the
9 rear "T" frame (180) and back for the complete cycle; the cycle of the left swing arm
10 (410) and the cycle of the right swing arm (430) each ascribes a a vertical upstanding
11 plane parallel to the frame center leg (140) and the center vertical leg (260);

12
13 o. the left upper swing arm section (415) and the right upper swing arm section (435)
14 rotate respectively relative to the left middle swing arm section (420) and the right middle
15 swing arm section (440), about the respective left master hub aperture (475) and the right
16 master hub aperture (485), ascribing a rotation plane orthogonal to the swing plane
17 ascribed by the left swing arm (410) and the right swing arm (430); when turning forces
18 are exerted at the left upper swing arm section (415) and the right upper swing arm
19 section (435), it is noted that the said left upper swing arm section (415) and the right
20 upper swing arm section (435) are never pivoting forward or backward, relative to the
21 frame center leg (140) but remain, relative to the frame center leg (140), in a plane
22 parallel to that of the frame center leg (140) and the center vertical leg (260).

23 -
24 p. the left upper swing arm section (415) and the right upper swing arm section (435),
25 when rotated, exert forces on the left side steering cable (1100) and the right side steering

26
27 Certificate of facsimile filing
28 on December 20, 2006 by Floyd E. Ivey,
Serial No. 10/688,488

Floyd E. Ivey, USPTO 35552,

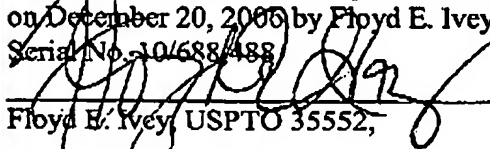
Application No. 10/688,488

1 cable (1200) which are in steering communication with a steering unit (800); the steering
2 unit (800), proximal to or at the center leg first end (144), comprises a right axle (835)
3 affixed by axle affixing means at the front "T" frame first end (164) at a right steering
4 knuckle (830) and a left axle (875) affixed by axle affixing means at the front "T" frame
5 second end (168) at a left steering knuckle (870); at least one front wheel (175) rotatably
6 affixed by wheel affixing means at each of the said right axle (835) and left axle (875)
7 respectfully distal to the front "T" frame first end (164) and the front "T" frame second
8 end (168);

9
10 q. the right steering knuckle (830) comprises a right steering hub (810) immovably
11 affixed by fixing means to a right bearing mount (185); a bushing or bearing means and
12 housing with shaft (186) received by the rotatable right bearing mount (185); the right
13 axle (835) extending from and affixed by axle affixing means to the right bearing mount
14 (185);

15
16 r. the left steering knuckle (870) comprises a left steering hub (850) immovably affixed
17 by fixing means to a left bearing mount (190); a bushing or bearing means and housing
18 with shaft (168) received by the rotatable left bearing mount (190); the left axle (875)
19 extending from and affixed by axle affixing means to the left bearing mount (190);

20
21 s. a tie bar (890) interrelates the right steering hub (810) and the left steering hub (850) to
22 insure alignment and coordinated parallel movement between the at least one front wheel
23 (175) at each of the said right axle (835) and left axle (875); a left tie bar connection
24 (892) and a right tie bar connection (894) affixed by immovable means respectively at the
25 left bearing mount (190) and the right bearing mount (185) receive the tie bar (890) by

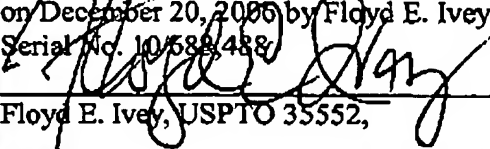
26
27 Certificate of facsimile filing
28 on December 20, 2006 by Floyd E. Ivey,
Serial No. 10/688,488

Floyd E. Ivey, USPTO 35552,

Application No. 10/688,488

1 rotatable connection means (893);

2
3 t. the steering communication means between the left upper swing arm section (415) and
4 left master hub (470) is respectively by the first left side steering cable (1100) and second
5 right side steering cable (1200) connection with the left steering hub (850) and the right
6 steering hub (810) respectively; and between the right upper swing arm section (435) and
7 right master hub (480) is respectively by second left side steering cable (1300) and second
8 right side steering cable (1400) connection with the right steering hub (810) and the left
9 steering hub (850) respectively;

10
11 u. the left upper swing arm section (415), when pivoted at the left master hub (470) exerts
12 rotational forces at both the right steering hub (810) and the left steering hub (850) and
13 the right upper swing arm section (435), when pivoted at the right master hub (480) exerts
14 rotational forces at both the right steering hub (810) and the left steering hub (850).

15
16
17
18
19
20
21
22
23
24
25
26
27 Certificate of facsimile filing
28 on December 20, 2006 by Floyd E. Ivey,
Serial No. 10/688,488

Floyd E. Ivey, USPTO 35552,

Application No. 10/688,488